

CLAIMS

We claim:

1. A method of distributed collaborative computing comprising:
 - 5 partitioning a collaboration function into sub-functions;
 - assigning at least one said sub-function to each of a plurality of logical processes;
 - associating a respective management process with
 - 10 each of said plurality of logical processes, said logical processes configured so that each said logical process is capable of communicating with every other said logical process thru said respective management
 - 15 process;
 - communicating between said logical processes using said respective management processes; and
 - monitoring said respective management processes with a single supervisor process;
 - 20 wherein said monitoring further comprises re-creating one or more said logical processes in response to detecting a failure of one or more said logical processes.
2. The method of Claim 1, said detecting further
 - 25 comprising:
 - monitoring a message stream to determine a responsiveness of said logical process; and
 - if said responsiveness ceases, signaling said failure to said single supervisor process.

3. The method of Claim 1, said re-creating further comprising:

5 spawning a new logical process;
assigning to said new logical process said at
least one sub-function corresponding to said
failed logical process;
recovering the state of said failed logical
process into said new logical process; and
associating a new management process with said new
10 logical process.

4. The method of Claim 1, said re-creating further comprising:

15 activating a stand-by logical process, said stand-by process having been instantiated prior to said detecting;
assigning to said stand-by logical process said at least one sub-function corresponding to said failed logical process;
recovering the state of said failed logical
20 process into said new logical process;
associating a new management process with said stand-by logical process; and
spawning a new stand-by logical process.

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5. A computer program for use in distributed collaborative computing, comprising computer instructions for:

30 partitioning a collaboration function into sub-functions;

assigning at least one said sub-function to each
 of a plurality of logical processes;
 associating a respective management process with
 each of said plurality of logical processes,
 5 said logical processes configured so that
 each said logical process is capable of
 communicating with every other said logical
 process thru said respective management
 process;
 10 communicating between said logical processes using
 said respective management processes; and
 monitoring said respective management processes
 with a single supervisor process;
 wherein said monitoring further comprises re-creating
 15 one or more said logical processes in response to
 detecting a failure of one or more said logical
 processes.

6. The computer program of Claim 5, said
 detecting further comprising:
 20 monitoring a message stream to determine a
 responsiveness of said logical process; and
 if said responsiveness ceases, signaling said
 failure to said single supervisor process.

7. The computer program of Claim 5, said re-
 25 creating further comprising:
 spawning a new logical process;
 assigning to said new logical process said at
 least one sub-function corresponding to said
 failed logical process;

recovering the state of said failed logical
 process into said new logical process; and
 associating a new management process with said new
 logical process.

- 5 8. The computer program of Claim 5, said re-
 creating further comprising:
 activating a stand-by logical process, said stand-
 by process having been instantiated prior to
 said detecting;
 10 assigning to said stand-by logical process said at
 least one sub-function corresponding to said
 failed logical process;
 recovering the state of said failed logical
 process into said new logical process;
 15 associating a new management process with said
 stand-by logical process; and
 spawning a new stand-by logical process.

- 20 9. A computer-readable medium storing a computer
 program executable by a plurality of server computers,
 the computer program comprising computer instructions
 for:
 partitioning a collaboration function into sub-
 25 functions;
 assigning at least one said sub-function to each
 of a plurality of logical processes;
 associating a respective management process with
 each of said plurality of logical processes,
 30 said logical processes configured so that

each said logical process is capable of communicating with every other said logical process thru said respective management process;

5 communicating between said logical processes using said respective management processes; and monitoring said respective management processes with a single supervisor process;

wherein said monitoring further comprises re-creating
10 one or more said logical processes in response to detecting a failure of one or more said logical processes.

10. The computer-readable medium of Claim 9, said detecting further comprising:

15 monitoring a message stream to determine a responsiveness of said logical process; and if said responsiveness ceases, signaling said failure to said single supervisor process.

11. The computer-readable medium of Claim 9, said
20 re-creating further comprising:

spawning a new logical process;
assigning to said new logical process said at least one sub-function corresponding to said failed logical process;
25 recovering the state of said failed logical process into said new logical process; and associating a new management process with said new logical process.

12. The computer-readable medium of Claim 9, said re-creating further comprising:

activating a stand-by logical process, said stand-by process having been instantiated prior to said detecting;

assigning to said stand-by logical process said at least one sub-function corresponding to said failed logical process;

recovering the state of said failed logical process into said new logical process;

associating a new management process with said stand-by logical process; and
spawning a new stand-by logical process.

13. A computer data signal embodied in a carrier wave, comprising computer instructions for:

partitioning a collaboration function into sub-functions;

assigning at least one said sub-function to each of a plurality of logical processes;

associating a respective management process with each of said plurality of logical processes, said logical processes configured so that each said logical process is capable of communicating with every other said logical process thru said respective management process;

communicating between said logical processes using said respective management processes; and

monitoring said respective management processes
 with a single supervisor process;
 wherein said monitoring further comprises re-creating
 one or more said logical processes in response to
 5 detecting a failure of one or more said logical
 processes.

14. The computer data signal of Claim 13, said
 detecting further comprising:

monitoring a message stream to determine a
 10 responsiveness of said logical process; and
 if said responsiveness ceases, signaling said
 failure to said single supervisor process.

15. The computer data signal of Claim 13, said
 re-creating further comprising:

15 spawning a new logical process;
 assigning to said new logical process said at
 least one sub-function corresponding to said
 failed logical process;
 recovering the state of said failed logical
 20 process into said new logical process; and
 associating a new management process with said new
 logical process.

16. The computer data signal of Claim 13, said
 re-creating further comprising:

25 activating a stand-by logical process, said stand-
 by process having been instantiated prior to
 said detecting;

assigning to said stand-by logical process said at
least one sub-function corresponding to said
failed logical process;

recovering the state of said failed logical

5 process into said new logical process;

associating a new management process with said
stand-by logical process; and

spawning a new stand-by logical process.

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